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New estimation of the secondary antideuteron cosmic-ray flux

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A new study about the production of antideuterons in high-energy cosmic-ray collisions is presented in this work. Antideuteron production cross-section is obtained through the coalescence model, which is simulated using an afterburner and the Monte Carlo generator EPOS-LHC. Coalescence model key parameter (p_0) is calculated from the comparison of simulation to updated collider data, including ALICE-LHC results. Antideuteron propagation in the Galaxy is evaluated employing GALPROP. The resulting antideuteron flux shows a larger magnitude compared to previous studies and a slightly different shape in the energy distribution as a consequence of the coalescence parameter (p_0) energy dependence.

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